

## POLICY BASED PROVISIONING OF NETWORK DEVICE RESOURCES

### Abstract of the Disclosure

Methods are disclosed for establishing a path for data transmissions in a system having a plurality of possible paths by creating a configuration database and establishing internal connection paths based upon a configuration policy and the configuration database. The configuration policy can be based on available system resources and needs at a given time. In one embodiment, one or more tables are initiated in the configuration database to provide connection information to the system. For example, a path table and a service endpoint table can be employed to establishing a partial record in the configuration database whenever a user connects to a particular port on a universal port card in the system. The method can further include periodically polling records in the path table and transmitting data from the partial records to a policy provisioning manager (PPM). The PPM then implements a connection policy by comparing one or more of the new path characteristics, to the available forwarding card resources in the quadrant containing the universal port card port and path. The path characteristics can include the protocol, the desired number of time slots, the desired number of virtual circuits, and any virtual circuit scheduling restrictions. The PPM can also take other factors into consideration, including quality of service, for example, redundancy requirements or dedicated resource requirements, and balancing resource usage (i.e., load balancing) evenly within a quadrant.